

EUROPEAN PATENT OFFICE

Patent Abstracts of Japan

D2
Dust by air turbine - no clean air inlet

PUBLICATION NUMBER : 01221128
PUBLICATION DATE : 04-09-89

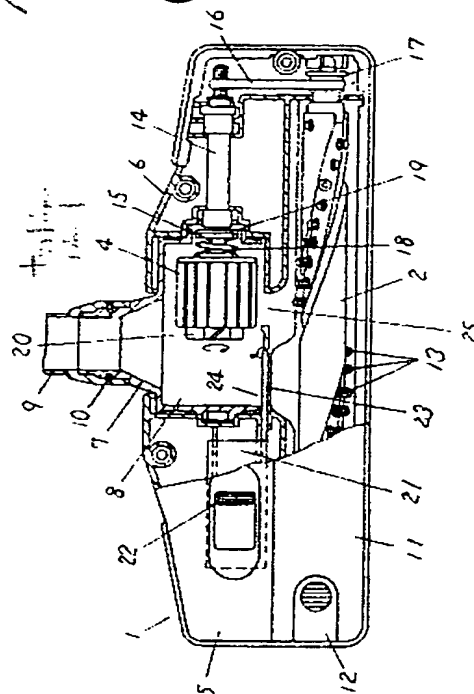
APPLICATION DATE : 29-02-88
APPLICATION NUMBER : 63046197

APPLICANT : MATSUSHITA ELECTRIC IND CO LTD;

INVENTOR : HIROSE TORU;

INT.CL. : A47L 9/04

TITLE : TURBINE NOZZLE FOR VACUUM
CLEANER



ABSTRACT : PURPOSE: To prevent noise from increasing and the bearing part of a rotary section from lowering its durability by providing blades applying a moving thrust force in the axial direction of a turbine wheel, and a turbine spring applying a resilient urging force in a direction reverse to the thrust direction so as to restrain the rotational speed of the turbine wheel and a rotary brush below a predetermined value.

CONSTITUTION: When the use of a turbine nozzle 1 is started, the flow rate of sucked air impinging upon a turbine wheel 4 is increased so as to start the rotation of the turbine wheel 4 and a rotary brush 2 at a high speed, and simultaneously, blades 20 gives a thrust force so that the turbine wheel 4 and a turbine shaft 15 start their movements. When the blade 20 side end is moved by a maximum distance, relative to an auxiliary passage 25, the flow rate of sucked air impinging upon the turbine wheel 4 is reduced so that the rotational speeds of the turbine wheel 4 and the rotary brush 2 are limited to a predetermined value less than their set rotational speed. When dust is accumulated in the vacuum cleaner, the flow rate of sucked air decreases so that the movements of the turbine wheel 4 and the turbine shaft 15 are reduced. The turbine wheel 4 and the turbine shaft 15 are returned to their original positions when the flow rate is below a predetermined value. Since the rotational speeds of the turbine wheel 4 and the rotary brush are maintained at a set value, it is possible to prevent noise from increasing due to rotation at a very high speed and to prevent the durability of the bearing part from lowering.

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